

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-92. (Cancelled)

93. (Currently Amended) An isolated nucleic acid encoding a polypeptide comprising a HER-2/Neu fusion protein, the HER-2/Neu fusion protein comprising consisting of a HER-2/neu extracellular domain fused linked to a HER-2/neu phosphorylation domain, wherein the nucleic acid hybridizes under stringent conditions to the complement of a nucleic acid sequence encoding the amino acid sequence of SEQ ID NO:6, and separately to the complement of a nucleic acid sequence encoding the amino acid sequence of SEQ ID NO:3, and separately to the complement of a nucleic acid sequence encoding the amino acid sequence of SEQ ID NO:4, wherein the hybridization reaction is incubated in a solution comprising 5x SSC at a temperature of 50-65°C and washed in a solution comprising 0.2x SSC and 0.1% SDS at a temperature of 65°C, HER-2/Neu fusion protein comprises at least 90% identity to SEQ ID NO:6 and wherein the HER-2/Neu fusion protein is capable of producing an immune response in a warm-blooded animal.

94-96. (cancelled)

97. (Currently Amended) The nucleic acid of claim 93, wherein the HER-2/Neu fusion protein domains comprises sequences that are linked via an amino acid linker.

98. (Previously Presented) A viral vector comprising a nucleic acid of claim 93.

99. (Previously Presented) A composition comprising the nucleic acid of claim 93, and a physiologically acceptable carrier or diluent.

100. (Previously Presented) The composition of claim 99, wherein the composition is a vaccine.

101. (Previously Presented) The composition of claim 99, further comprising an immunostimulatory substance.

102. (Previously Presented) The composition of claim 99, wherein the nucleic acid is a DNA molecule.

103. (Currently Amended) An isolated nucleic acid encoding a polypeptide comprising a HER-2/Neu fusion protein, the HER-2/Neu fusion protein comprising consisting of a HER-2/neu extracellular domain fused linked to a fragment of the HER-2/neu phosphorylation domain, wherein the nucleic acid hybridizes under stringent conditions to the complement of a nucleic acid encoding the amino acid sequence of SEQ ID NO:7, and separately to the complement of a nucleic acid sequence encoding the amino acid sequence of SEQ ID NO:3, and separately to the complement of a nucleic acid sequence encoding the amino acid sequence of SEQ ID NO:5, wherein the hybridization reaction is incubated in a solution comprising 5x SSC at a temperature of 50-65°C and washed in a solution comprising 0.2x SSC and 0.1% SDS at a temperature of 65°C, HER-2/Neu fusion protein comprises at least 90% identity to SEQ ID NO:7 and wherein the protein is capable of producing an immune response in a warm-blooded animal.

104-106. (Cancelled)

107. (Currently Amended) The nucleic acid of claim 103, wherein the HER-2/Neu fusion protein domains comprises sequences that are linked via an amino acid linker.

108. (Previously Presented) A viral vector comprising a nucleic acid of claim 103.

109. (Previously Presented) A composition comprising the nucleic acid of claim 103, and a physiologically acceptable carrier or diluent.

110. (Previously Presented) The composition of claim 109, wherein the composition is a vaccine.

111. (Previously Presented) The composition of claim 109, further comprising an immunostimulatory substance.

112. (Previously Presented) The composition of claim 109, wherein the nucleic acid is a DNA molecule.

113. (Previously Presented) A method of making a fusion protein, the method comprising the steps of:

- (a) introducing into a cell an expression vector comprising a nucleic acid according to claims 93 or 103;
- (b) culturing the transfected cell; and
- (c) purifying the expressed fusion protein.

114. (Original) The method of claim 113, wherein the cell is a CHO cell.

115. (Original) The method of claim 113, wherein the cell is cultured in suspension, under serum-free conditions.

116. (Previously Presented) The method of claim 113, wherein the expressed fusion protein is purified by a two-step procedure, the procedure comprising:

- (a) anion exchange chromatography; and
- (b) hydrophobic chromatography.

117. (Currently Amended) The nucleic acid of claim 93, wherein the ~~nucleic acid encodes a~~ HER-2/Neu fusion protein ~~comprising~~ consists of an amino acid sequence of SEQ ID NO:3 linked to an amino acid sequence of SEQ ID NO:4.

118. (Currently Amended) The nucleic acid of claim 93, wherein the ~~nucleic acid encodes a~~ HER-2/Neu fusion protein ~~comprising~~ consists of an amino acid sequence of SEQ ID NO:3 linked to an amino acid sequence of SEQ ID NO:5.

119. (Currently Amended) The nucleic acid of claim 93 117, wherein the ~~nucleic acid encodes~~ HER-2/Neu fusion protein consists of an amino acid sequence of SEQ ID NO:6.

120. (Currently Amended) The nucleic acid of claim 93 118, wherein the ~~nucleic acid encodes~~ HER-2/Neu fusion protein consists of an amino acid sequence of SEQ ID NO:7.

121. (Currently Amended) The nucleic acid of claim 93, wherein the ~~nucleic acid encodes a secreted fusion protein~~ polypeptide is secreted.

122. (Currently Amended) The nucleic acid of claim 103, wherein the ~~nucleic acid encodes a~~ HER-2/Neu fusion protein ~~comprising~~ consists of amino acid sequence of SEQ ID NO:3 linked to an amino acid sequence of SEQ ID NO:5.

123. (Currently Amended) The nucleic acid of claim 103 122, wherein the ~~nucleic acid encodes~~ HER-2/Neu fusion protein consists of an amino acid sequence of SEQ ID NO:7.

124. (Currently Amended) The nucleic acid of claim 103, wherein the ~~nucleic acid encodes a secreted fusion protein~~ polypeptide is secreted.

125. (Previously Presented) The composition of claim 109, comprising an oil-in-water emulsion.

126. (Previously Presented) The composition of claim 125, comprising tocopherol.

127. (Previously Presented) The composition of claim 111, wherein the immunostimulatory substance comprises 3D-MPL, QS21, or a combination of 3D-MPL and QS21.

128. (Previously Presented) The composition of claim 111, wherein the immunostimulatory substance comprises 3D-MPL and QS21 in an oil-in-water emulsion.

129. (Previously Presented) The composition of claim 128, comprising tocopherol.

130. (Previously Presented) The composition of claim 109, comprising a CpG-containing oligonucleotide.